

IN THE CLAIMS:

Claims 43 through 53 were previously cancelled. None of the claims have been amended herein. All of the pending claims are presented below. This listing of claims will replace all prior versions and listings of claims in the application. Please enter these claims as previously amended.

1. (Original) A method of forming a pattern on a resist comprising:
providing a substrate having a resist disposed thereon and located to receive an electron beam;
exposing the resist with at least one generally rectangular-shaped shot from the electron beam to
form a first feature;
relatively altering a rotational orientation of the substrate and a path of the generally
rectangular-shaped shot with respect to each other by a predetermined angle; and
exposing the resist with at least one additional generally rectangular-shaped shot from the
electron beam to form a second feature with at least one linear, peripheral edge
substantially oriented at the predetermined angle relative to the first feature.
2. (Previously presented) The method according to claim 1, further comprising
forming the first feature using two or more generally rectangular-shaped shots from the electron
beam, wherein each generally rectangular-shaped shot is abutted to an adjacent generally
rectangular-shaped shot to form a larger, substantially contiguous third feature.
3. (Previously presented) The method according to claim 2, further comprising
forming the larger, contiguous second feature using two or more generally rectangular-shaped
shots from the electron beam, wherein each generally rectangular-shaped shot is abutted to an
adjacent generally rectangular-shaped shot to form a larger, substantially contiguous fourth
feature.

4. (Original) The method according to claim 1, further comprising developing the resist to form a mask on the substrate.

5. (Original) The method according to claim 1, wherein the relatively altering the rotational orientation of the substrate and the path of the generally rectangular-shaped shot is effected by rotating the substrate by the predetermined angle.

6. (Original) The method according to claim 1, wherein the relatively altering the rotational orientation of the substrate and the path of the generally rectangular-shaped shot is effected by rotating an apparatus for defining the path of the generally rectangular-shaped shot by the predetermined angle.

7. (Original) The method according to claim 1, further comprising selecting the substrate to include a semiconductor material.

8. (Original) The method according to claim 1, further comprising selecting the substrate to include a glass material.

9. (Original) A method of forming a pattern on a resist comprising:
providing a substrate having a resist disposed thereon and located to receive an electron beam, the substrate having a reference coordinate system defined by a first coordinate system having an X axis perpendicular to a Y axis and a second coordinate system having an X' axis perpendicular to a Y' axis, wherein the first coordinate system is oriented at a predetermined angle relative to the second coordinate system;
exposing the resist with at least one generally rectangular-shaped shot from the electron beam to form at least one non-angled feature, wherein a first edge of the at least one generally rectangular-shaped shot is generally parallel to the X axis and a second edge of the at least one generally rectangular-shaped shot is generally parallel to the Y axis;

relatively altering a rotational orientation of the substrate and a path of the generally rectangular-shaped shot with respect to each other by a predetermined angle; and exposing the resist with at least one additional generally rectangular-shaped shot from the electron beam to form at least one angled feature, wherein a first edge of the at least one additional generally rectangular-shaped shot is generally parallel to the X' axis and a second edge of the at least one additional generally rectangular-shaped shot is generally parallel to the Y' axis.

10. (Previously presented) The method according to claim 9, further comprising forming the at least one non-angled feature using two or more generally rectangular-shaped shots from the electron beam, wherein each generally rectangular-shaped shot is abutted to an adjacent generally rectangular-shaped shot to form a larger, substantially contiguous feature.

11. (Previously presented) The method according to claim 10, further comprising forming the at least one angled feature using two or more generally rectangular-shaped shots from the electron beam, wherein each generally rectangular-shaped shot is abutted to an adjacent generally rectangular-shaped shot to form a larger, substantially contiguous feature.

12. (Original) The method according to claim 9, further comprising developing the resist to form a mask on the substrate.

13. (Original) The method according to claim 9, wherein the relatively altering the rotational orientation of the substrate and the path of the generally rectangular-shaped shot is effected by rotating the substrate by the predetermined angle.

14. (Original) The method according to claim 9, wherein the relatively altering the rotational orientation of the substrate and the path of the generally rectangular-shaped shot is effected by rotating an apparatus for defining the path of the generally rectangular-shaped shot by the predetermined angle.

15. (Original) The method according to claim 9, further comprising selecting the substrate to include a semiconductor material.

16. (Original) The method according to claim 9, further comprising selecting the substrate to include a glass material.

17. (Previously presented) A method of forming a pattern on a resist, the pattern including at least one non-angled feature and at least one angled feature substantially oriented at a predetermined angle relative to the at least one non-angled feature, the method comprising: providing a substrate having a resist disposed thereon and located to receive an electron beam; and
determining whether a first time required to form the at least one angled feature of the pattern using two or more stepped generally rectangular-shaped shots from the electron beam is greater than or less than a second time required to relatively alter a rotational orientation of the substrate and a path of the generally rectangular-shaped shot with respect to each other by the predetermined angle and subsequently form the at least one angled feature using at least one generally rectangular-shaped shot from the electron beam.

18. (Original) The method according to claim 17, wherein upon determining the first time to be less than the second time:
forming the at least one non-angled feature using at least one generally rectangular-shaped shot from the electron beam.

19. (Previously presented) The method according to claim 18, further comprising forming the at least one non-angled feature using two or more generally rectangular-shaped shots from the electron beam, wherein each generally rectangular-shaped shot is abutted to an adjacent generally rectangular-shaped shot to form a larger, substantially contiguous feature.

20. (Original) The method according to claim 18, further comprising forming the at least one angled feature on the resist using the two or more stepped generally rectangular-shaped shots from the electron beam without rotating the substrate or an apparatus for defining the path of the generally rectangular-shaped shot.

21. (Original) The method according to claim 20, further comprising developing the resist to form a mask on the substrate.

22. (Original) The method according to claim 17, wherein upon determining the first time to be greater than the second time:
exposing the resist with at least one generally rectangular-shaped shot from the electron beam to form the at least one non-angled feature;
relatively altering a rotational orientation of the substrate and the path of the generally rectangular-shaped shot with respect to each other by the predetermined angle; and
exposing the resist with at least one additional generally rectangular-shaped shot from the electron beam to form the at least one angled feature.

23. (Previously presented) The method according to claim 22, further comprising forming the at least one non-angled feature using two or more generally rectangular-shaped shots from the electron beam, wherein each generally rectangular-shaped shot is abutted to an adjacent generally rectangular-shaped shot to form a larger, substantially contiguous feature.

24. (Previously presented) The method according to claim 23, further comprising forming the at least one angled feature using two or more generally rectangular-shaped shots from the electron beam, wherein each generally rectangular-shaped shot is abutted to an adjacent generally rectangular-shaped shot to form a larger, substantially contiguous feature.

25. (Original) The method according to claim 22, wherein the relatively altering the rotational orientation of the substrate and the path of the generally rectangular-shaped shot is effected by rotating the substrate by the predetermined angle.

26. (Original) The method according to claim 22, wherein the relatively altering the rotational orientation of the substrate and the path of the generally rectangular-shaped shot is effected by rotating an apparatus for defining the path of the generally rectangular-shaped shot by the predetermined angle.

27. (Original) The method according to claim 22, further comprising developing the resist to form a mask on the substrate.

28. (Original) The method according to claim 17, further comprising selecting the substrate to include a semiconductor material.

29. (Original) The method according to claim 17, further comprising selecting the substrate to include a glass material.

30. (Original) A method of forming a pattern on a resist, the pattern including at least one non-angled feature and at least one angled feature substantially oriented at a predetermined angle relative to the non-angled feature comprising:

providing a substrate having a resist disposed thereon and located to receive an electron beam, the substrate having a reference coordinate system defined by a first coordinate system having an X axis perpendicular to a Y axis and a second coordinate system having an X' axis perpendicular to a Y' axis, wherein the first coordinate system is oriented at a predetermined angle relative to the second coordinate system; and

determining whether a first time required to form the at least one angled feature of the pattern using two or more stepped generally rectangular-shaped shots from the electron beam is greater than or less than a second time required to relatively alter a rotational orientation of the substrate and a path of the generally rectangular-shaped shot with respect to each other by the predetermined angle and subsequently form the at least one angled feature using at least one generally rectangular-shaped shot from the electron beam.

31. (Original) The method according to claim 30, wherein upon determining the first time to be less than the second time:

forming the at least one non-angled feature using at least one generally rectangular-shaped shot from the electron beam.

32. (Previously presented) The method according to claim 31, further comprising forming the at least one non-angled feature using two or more generally rectangular-shaped shots from the electron beam, wherein each generally rectangular-shaped shot is abutted to an adjacent generally rectangular-shaped shot to form a larger, substantially contiguous feature.

33. (Original) The method according to claim 31, further comprising forming the at least one angled feature on the resist using the two or more stepped generally rectangular-shaped shots from the electron beam without rotating the substrate or an apparatus for defining the path of the generally rectangular-shaped shot.

34. (Original) The method according to claim 32, further comprising developing the resist to form a mask on the substrate.

35. (Original) The method according to claim 30, wherein upon determining the first time to be greater than the second time:
exposing the resist with at least one generally rectangular-shaped shot from the electron beam to form the at least one non-angled feature, wherein a first edge of the at least one generally rectangular-shaped shot is generally parallel to the X axis and a second edge of the at least one generally rectangular-shaped shot is generally parallel to the Y axis;
relatively altering a rotational orientation of the substrate and the path of the generally rectangular-shaped shot with respect to each other by the predetermined angle; and
exposing the resist with at least one additional generally rectangular-shaped shot from the electron beam to form the at least one angled feature, wherein a first edge of the at least one additional generally rectangular-shaped shot is generally parallel to the X' axis and a second edge of the at least one additional generally rectangular-shaped shot is generally parallel to the Y' axis.

36. (Previously presented) The method according to claim 35, further comprising forming the at least one non-angled feature using two or more generally rectangular-shaped shots from the electron beam, wherein each generally rectangular-shaped shot is abutted to an adjacent generally rectangular-shaped shot to form a larger, substantially contiguous feature.

37. (Previously presented) The method according to claim 36, further comprising forming the at least one angled feature using two or more generally rectangular-shaped shots from the electron beam, wherein each generally rectangular-shaped shot is abutted to an adjacent generally rectangular-shaped shot to form a larger, substantially contiguous feature.

38. (Original) The method according to claim 35, wherein the relatively altering the rotational orientation of the substrate and the path of the generally rectangular-shaped shot is effected by rotating the substrate by the predetermined angle.

39. (Original) The method according to claim 35, wherein the relatively altering the rotational orientation of the substrate and the path of the generally rectangular-shaped shot is effected by rotating an apparatus for defining the path of the generally rectangular-shaped shot by the predetermined angle.

40. (Original) The method according to claim 35, further comprising developing the resist to form a mask on the substrate.

41. (Original) The method according to claim 30, further comprising selecting the substrate to include a semiconductor material.

42. (Original) The method according to claim 30, further comprising selecting the substrate to include a glass material.

43.-53. (Cancelled)